

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A drive device of an ultrasonic linear motor in which a rail and a base body are driven movably relative to one another by a driving part interposed between the rail and the base body, the driving part comprising:

at least a pair of right and left rollers making contact with side faces of the rail;

at least a pair of right and left ultrasonic vibrators for applying a turning force individually to each of the pair of right and left rollers; and

an urging member that urges the ultrasonic vibrators and the rollers toward the side faces of the rail,

wherein each of the pair of right and left ultrasonic vibrators is comprised of a piezoelectric device and a vibrating elastic member integrally affixed to the piezoelectric device, and each of the pair of right and left rollers is adapted to be turned by vibration of the respective elastic member,

wherein the piezoelectric device includes two polarized regions, an AC (alternating current) voltage being applied to only one of the two polarized regions when the rollers rotate to move the base body in a first direction, and

wherein the base body is movably supported on an upper face of the rail by bearings disposed on a bottom face of the base body, and the bearing bear a load of the base body.

2. (Previously Presented) The drive device according to claim 1, wherein the ultrasonic vibrators and the rollers and the urging member are received en bloc in a holding

frame and are fitted to the base body via the holding frame, and the rollers are removably mounted to the holding frame.

3. (Currently Amended) The drive device according to claim 1, wherein the rail has ~~an upper~~ the upper face for bearing the load of the base body and sloping side faces formed on left and right side faces thereof, the base body has opposing faces facing the sloping side faces, and the rail is gripped by the rollers and ~~a bottom~~ the bottom face of the base body, the rollers being mounted on the opposing faces and making contact with the sloping side faces of the rail.

4. (Previously Presented) The drive device according to claim 1, wherein each of the pair of right and left ultrasonic vibrators and each of the pair of right and left rollers are supported by a holder member disposed on the base body, the holder member being urged by the urging member toward the side faces of the rail.

5. (Currently Amended) An ultrasonic linear motor, comprising:
a rail;
a base body; and
a driving part interposed between the rail and the base body, said driving part movably driving the rail and the base body relative to one another, the driving part comprising:
at least a pair of right and left rollers making contact with side faces of the rail;
at least a pair of right and left ultrasonic vibrators for applying a turning force individually to each of the pair of right and left rollers; and

an urging member that urges the ultrasonic vibrators and the rollers toward the side faces of the rail,

wherein each of the pair of right and left ultrasonic vibrators is comprised of a piezoelectric device and a vibrating elastic member integrally affixed to the piezoelectric device, and each of the pair of right and left rollers is adapted to be turned by vibration of the respective elastic member,

wherein the piezoelectric device includes two polarized regions, an AC (alternating current) voltage being applied to only one of the two polarized regions when the rollers rotate to move the base body in a first direction, and

wherein the base body is movably supported on an upper surface of the rail by bearings disposed on a bottom face of the base body, and the bearing bear a load of the base body.

6. (Previously Presented) The ultrasonic linear motor according to claim 5, wherein the ultrasonic vibrators and the rollers and the urging member are received en bloc in a holding frame and are fitted to the base body via the holding frame, and the rollers are removably mounted to the holding frame.

7. (Currently Amended) The ultrasonic linear motor according to claim 5, wherein the rail has ~~an upper~~ the upper face for bearing the load of the base body and sloping side faces formed on left and right side faces thereof, the base body has opposing faces facing the sloping side faces, and the rail is gripped by the rollers and ~~a bottom~~ the bottom face of the base body,

the rollers being mounted on the opposing faces and making contact with the sloping side faces of the rail.

8. (Previously Presented) The ultrasonic linear motor according to claim 5, wherein each of the pair of right and left ultrasonic vibrators and each of the pair of right and left rollers are supported by a holder member disposed on the base body, the holder member being urged by the urging member toward the side faces of the rail.

9. (Cancelled)

10. (New) The drive device according to claim 1, wherein the AC voltage is applied to only another one of the two polarized regions when the rollers rotate to move the base body in a second direction opposite to the first direction.

11. (New) The drive device according to claim 1, wherein when the rollers are rotated by the ultrasonic vibrators to move the base body in the first direction, one of the right roller and the left roller rotates in a clockwise direction, and the other one of the right roller and the left roller rotates in a counterclockwise direction.

12. (New) The drive device according to claim 1, wherein the bearing are bar-shaped bearings disposed between the bottom face of the base body and the upper face of the rail.

13. (New) The drive device according to claim 1, wherein the bearing are ball bearings disposed between the bottom face of the base body and the upper face of the rail at opposite corners of the rail.

14. (New) The ultrasonic linear motor according to claim 5, wherein the AC voltage is applied to only another one of the two polarized regions when the rollers rotate to move the base body in a second direction opposite to the first direction.

15. (New) The ultrasonic linear motor according to claim 5, wherein when the rollers are rotated by the ultrasonic vibrators to move the base body in the first direction, one of the right roller and the left roller rotates in a clockwise direction, and the other one of the right roller and the left roller rotates in a counterclockwise direction.

16. (New) The ultrasonic linear motor according to claim 5, wherein the bearing are bar-shaped bearings disposed between the bottom face of the base body and the upper face of the rail.

17. (New) The ultrasonic linear motor according to claim 5, wherein the bearing are ball bearings disposed between the bottom face of the base body and the upper face of the rail at opposite corners of the rail.